



National Aeronautics and
Space Administration

Hazardous and Solid Waste Amendments (HSWA) Waste Minimization Requirements

1.0 Introduction

The New Mexico Environment Department (NMED) and United States Environmental Protection Agency (EPA) entered into a joint permitting agreement for the Part B Hazardous Waste Operating Permit issued to NASA Johnson Space Center White Sands Test Facility (WSTF) in February 1993. The Hazardous and Solid Waste Amendments (HSWA) Permit was administered by the EPA, and the Part B Hazardous Waste Operating Permit requirements are directed by NMED. NMED was delegated lead authority to enforce the HSWA requirements on April 7, 1999.

The following provides the HSWA permit waste minimization conditions and updates the plan NASA submitted in 1993 with source reduction, recycling, and planning activities that were accomplished from October 1, 2006 to September 30, 2007.

2.0 HSWA Permit Conditions

HSWA permit conditions are in bold with a response following.

III. STANDARD CONDITIONS

A. Waste Minimization

The Permittee shall submit a certified plan to the Administrative Authority, according to 40 CFR 270.11, in writing annually, by December 1, 1993 for the previous year ending September 30, 1993 specifying that:

- 1. The permittee has a program in place to reduce the volume and toxicity of all hazardous wastes which are generated by the facility's operation to the degree determined to be economically practicable; and that the proposed method of treatment, storage, or disposal is the practicable method currently available to the Permittee which minimizes the present and future threat to human health and the environment. This certified plan must address the items below:**
 - a. Any written policy or statement that outlines goals, objectives, and/or methods for source reduction and recycling of hazardous waste at the facility;**

In April 2002, NASA was registered into the 2000 revision of the ISO 9001 Standard. NASA and contractor management integrated Quality, Safety, and Environmental into a process-based system, the WSTF Management System (WMS). This system revised the Environmental Management System (EMS) WSTF Policy Directive and incorporated the EMS policy into a single WSTF Management Policy. The policy statement continues to commit WSTF to pollution prevention (waste minimization), continuous improvement, legal compliance, and sets forth direction for the accomplishment and measurement of the items stated in the policy. The policy commits WSTF to environmental excellence by using the WMS for the EMS-implemented procedures that evaluated and updated environmental aspects, ranked their significant environmental impacts, and established environmental objectives and targets. This determines how the impacts are managed for regulatory compliance, pollution prevention, waste generation reduction, and resource conservation (materials, fuel, and energy). During Fiscal Year (FY) 2007, WSTF expanded sustainability's WMS significant aspect with personnel awareness as its focus. WSTF plans to reduce natural resource consumption through the establishment of two energy significant aspects: (1) electrical energy reduction; and (2) incorporation of renewable energy sources. Management continues to maintain groundwater contamination as a significant aspect and plume front treatment and

mid-plume technology are management priorities. Hazardous Materials Management is the fifth significant aspect. An evaluation of the chemicals ordered at WSTF for hazardous waste planning/minimization purposes was initiated. Improved MSDS and materials management systems are being considered for accessibility and tracking purposes.

The ISO 14001 Standard is committed to reuse, recovery, and recycling, as opposed to disposal. The Environmental Department Planning Schedule (a continuously updated database) and required State and Federal regulatory reviews provide up-to-date, proactive, and expedient actions to pollution prevention and waste minimization compliance. During FY2007, WSTF hosted two third-party audits and NASA retained ISO 14001 registration by successful completion of the EMS portion of the WMS. NASA continues to issue Corrective and Preventative Action Requests to document and correct findings that result from either internal or off-site audits. Follow-up audits are performed by the WSTF Program Assurance Department to ensure the concerns/violations cited by the auditors were corrected and preventive measures were instituted.

WSTF managers and supervisors can enter information into the three positive categories of the Safety Inspection Management System (SIMS) database during FY2007. The database was used for reporting pollution prevention, chemical substitution, and waste minimization efforts. The Environmental Department has transferred the data into this report and the NASA Environmental Tracking System (NETS). NETS information is gathered for required NASA-wide reporting on the Federal level. Additionally, the NETS reporting information continues to be used on-site for tracking waste and minimization projects. In addition, Management has taken a hands-on approach to safety and environmental issues by conducting weekly walk-arounds to correct potential problems.

The NASA WSTF Pollution Prevention Plan required by Executive Order 13148, "Greening the Government Through Leadership in Environmental Management," was reviewed. The new Executive Order 13423 "Strengthening Federal Environmental, Energy, and Transportation Management" incorporates several executive orders and will require NASA to continue to prevent pollution and manage toxic and hazardous materials. A site instruction for waste management continues to require an annual waste profile review by the waste generators and the contractor Environmental Department. In addition, as an effort to comply with requirements set forth by NMED during the Part B Hazardous Waste Operating Permit application process, NASA continued to update the WSTF Individual Waste Profile Sheets (WIWPS) that identify and track each waste stream. The continuous waste characterization activities that have evolved as a result of NMED recommendations promote a closer look at waste generation. Hazardous waste generation processes, improved waste determinations, and generator attention to waste stream constituents and concentrations have reduced waste. In addition, more accurate estimates of quantities have changed WIWPS in favorable ways. The WSTF Pollution Prevention Program includes waste minimization as part of any waste profile initiation or review.

b. Any employee training or incentive programs designed to identify and implement source reduction and recycling opportunities;

The 2006 training programs were continued and new efforts were started during 2007. Prior to the two FY2007 ISO 14001 periodical audits, all WSTF personnel again received updates in their EMS Awareness Training through the emailed training "Snippets." The material emphasized sustainability, pollution prevention, continuous improvement, and compliance with environmental laws. The EMS Awareness Training continues to be delivered to newly hired personnel in the Environmental Briefing portion of new hire orientation. The NASA commitment to ISO 14001 continues to emphasize pollution prevention and waste minimization awareness. The WSTF Sustainability Initiative Team was successful in creating a "Promoting Environmental Sustainability" presentation that encompasses recycling and waste minimization and was invited to safety/environmental stand downs for the presentation and discussion of the content. Over 60 percent of the site participated in training sessions.

Environmental excellence is an extremely high priority of WSTF management and the goal to increase environmental awareness to the level that site safety maintains is initiating a culture change across the site. Environmental awareness, site accomplishments, program visibility, individual recognition, and ideas are gathered and shared using the site newsletter and posted bulletins distributed by the Keystone Committee. In addition, during the Safety, Environmental and Total Health Day, the WSTF Sustainability Initiative Team (WSIT) distributed materials and information to raise awareness, educate, and inform the WSTF community about environmental sustainability.

NASA continues to go beyond compliance with regulatory requirements to attain levels of environmental performance and management that benefit people, communities, and the environment. WSTF will actively pursue their stated commitments and adhere to the provisions set forth by the EPA. The Achievement Level Recognition of the NMED Green Zia Environmental Excellence Program was again awarded to WSTF.

c. Any source reduction and/or recycling measures implemented in the last five years or planned for the near future;

WSTF source reduction and recycling measures for the last year and future plans are presented in Appendix A, Tables 1-3.

d. An itemized list of the dollar amounts of capital expenditures (plant and equipment) and operating costs devoted to source reduction and recycling of hazardous waste;

Capital expenditures and operation costs associated with WSTF source reduction and recycling are not specifically tracked; however, activities initiated during FY2007 and in-place projects continue to reflect significant investments and cost avoidances. NASA continues to use the low sampling systems in 60 groundwater monitoring wells. The equipment and procedures are responsible for significantly decreasing generation of Investigative Derived Wastes, which are managed as hazardous waste. Costs of disposal and treatment of hazardous wastes, sampling labor, new wells and equipment, and environmental impacts are saved annually. Additionally, 640 gallons of propellant oxidizer and 540 gallons of methylhydrazine recovered from Peacekeeper guidance systems passed the cleanliness specification required for engine testing. The propellants were transferred into the facility fuel storage tanks for NASA use in future projects. NASA was able to recycle a significant amount of hardware and saved product repurchase dollars and eliminated the potential waste storage, treatment, and disposal/recycling costs.

Additional capital expenditures are related to the changes that the Components Services Group have implemented in the Clean Room. Cleaning solution replacement, water purification, pre-clean tank testing, and ultra sonic equipment continue to promote customer satisfaction, waste reduction, and shorter turn-around times.

e. Factors that have prevented implementation of source reduction and/or recycling;

The North American Industry Code Standard (NAICS) for WSTF is 927110 (Space Research and Technology) with testing at WSTF supporting the space industry (i.e. Space Shuttle, Space Station, Space Exploration). NASA test programs are dependent upon Federal funding and many projects are funded on a program-by-program basis. One-time, short-term, and inconsistent testing generates dynamic and variable waste streams that are difficult to manage for source reduction and recycling due to customer/test requirements, military specifications, original equipment manufacturer specifications, and program timelines.

During FY2007, WSTF continued to provide support for the NASA-wide Space Shuttle readiness and safety efforts, and testing was performed for the FY2007 Space Shuttle Missions. Constellation and future moon and beyond test programs, National Defense System rocket engine testing, and missile demilitarization impose increased customer testing requirements and create source reduction obstacles for the site. Additionally, recent elevated agency reporting and information gathering mandates continue to make involvement with source reduction as well as recycling programs and initiatives very difficult.

f. Sources of information on source reduction and/or recycling received at the facility (e.g., local government, trade associations, suppliers, etc.);

WSTF personnel participate in NASA-sponsored Sustainability, Recycling, Affirmative Procurement and Pollution Prevention Workshops and teleconferences that involve the information sharing of recycling, sustainability, and pollution prevention successes and strategies among NASA Centers throughout the United States. WSTF continues to evaluate and implement where possible, NASA Acquisition Pollution Prevention (AP2) Office recommendations. Scientists and Engineers from the Laboratories Propulsion Test, and Environmental Departments belong to professional organizations and attend meetings and conferences where information including waste generation reduction and elimination are discussed. One such group is the Joint Army, Navy, NASA, Air Force Interagency Propulsion Committee (JANNAF), which includes a group Chemical Process Information Analytical Center (CPIAC), and that division is broken into subgroups. The Safety and Environmental Protection subgroup members include WSTF personnel who participate and share information.

Information available on the Internet (NMED, EPA, Office of the Federal Environmental Executive, ofee.gov, intra-agency NASA facility, and RegScan Home Pages) continuously offer information related to source reduction and recycling, which are used by WSTF personnel. The NETS and NASA Recycling Video Teleconferencing Systems are two extremely effective methods for providing WSTF with current information. The EMS procedure, WSP 22-0021, "Legal and Other Requirements" provides a system that describes how to access, review, identify, and document legal and other requirements for applicable EPA, NMED, Executive Order, and NASA regulatory compliance. Steady sources that continue to be used include McCoy's "RCRA Unraveled" and "FaxBacks," which are both outstanding references and provide RCRA guidance.

WSTF signed a Project XL agreement between NASA, EPA, and NMED that implements an extensive Internet (web)-based information management and regulatory reporting system. WSTF continued to operate under Phase I during 2007. This saved white paper and expedited the timeliness of the reporting process. NASA is awaiting Phase II, which will provide the EPA and multiple NMED Bureaus with real-time access to regulatory reports, historical site archives, graphical interpretations of site conditions, and cross-media environmental compliance information and reports. In addition to reducing the time required for the flow of information, the Project will significantly continue to minimize white paper use and labor hours.

g. An investigation of additional waste minimization efforts which could be implemented at the facility. This investigation shall analyze the potential for reducing the quantity and toxicity of each waste stream through production reformulation, recycling, and all other appropriate means. The analysis shall include an assessment of the technical feasibility, cost, and potential waste reduction for each option;

Current WSTF procedures continue to require an annual WIWPS review for all WSTF waste streams. This analysis and waste characterization efforts investigate minimization efforts. The yearly evaluation includes generation process changes, contaminant concentrations, quantity variations, proper waste determination, and minimization possibilities.

The Contamination Control Facility (Clean Room), Propulsion Test Office, and Laboratories Office continuously research hazardous waste reduction, equipment replacement, product replacement, and product conservation efforts. The Contamination Control group extended development of aqueous cleaning operations, and researched recirculation of rinse waters, and improved verification methods to allow the cleaning facility the ability to continue to process a high percentage of the work orders without the use of solvents. In fact, hazardous waste minimization is difficult because WSTF has eliminated nearly all of the solvents from the majority of cleaning and preparatory processes at the facility. Propulsion and Labs personnel are awaiting funding to go forward with plans to procure and utilize equipment that has the capability of maintaining propellants within the parameters required by NASA Shuttle and customer driven specifications. In addition, the Chemistry Laboratory is investigating processes that do not involve the contamination of scrubber fluids for eliminating hydrazine vapors generated on fume hoods in the labs.

h. The Permittee shall submit a flow chart or matrix detailing all hazardous wastes it produces by quantity, type, and building/area;

The updated Hazardous Waste Matrix (Appendix B) identifies the WSTF hazardous waste streams by number, waste name, generation building, area, and the generator's annual estimated quantity. The WIWPS is a database system tool used to track facility waste. The matrix has changed in FY2007 due to the requirements imposed by increased use of lab packs and increases in pre-shipment waste characterization. During FY2007 hazardous materials storage areas, especially in the paint shop and materials prep, underwent a clean up of old and unused chemicals. The changes created many one-time WIWPSs that were generated for lab packed and aggregated waste streams. In addition, manifests and logbooks are used to track waste streams shipped off-site.

i. The Permittee shall demonstrate the need to use those processes which produce a particular hazardous waste due to a lack of alternative processes or available technology that would produce less hazardous waste.

Testing at WSTF supports the space industry. The wastes generated in association with this testing are derived from the following processes: engine firings, developmental research, equipment cleanliness/repair, Peacekeeper missile demilitarization, facility construction/maintenance, and computer and electrical support. These wastes are often dependent upon contractor test requirements, military specifications, program timelines, and additional conditions mandated by contracts. In addition, WSTF's remoteness and lack of access to a Publicly Owned Treatment Works (POTW) continue to require that WSTF manage several non-hazardous waste streams in a permitted Hazardous Waste Operating Unit.

Appendix A
Source Reduction and Recycling Tables

Table 1
WSTF Hazardous Waste Source Reduction
September 30, 2006 through October 1, 2007

| YEAR | SOURCE REDUCTION EFFORT | NET REDUCTION |
|------|--|---------------|
| 2007 | The Propulsion Test Office transferred in-specification ethanol that was remaining following Next Generation Testing to the Large Altitude Simulation System for use as product. The effort avoided generation of hazardous waste and off-site shipment and disposal costs. In addition, the "RCRA Empty" drums were recycled. | 2,100 gal |
| 2007 | The Propulsion Test Office sampled and transferred in specification methylhydrazine into the test system for future projects during the process of demilitarization of Peacekeeper Missiles. The effort minimized the generation of hazardous waste and off-site shipment and disposal costs. | 560 gal |
| 2007 | The Propulsion Test Office sampled and transferred in specification nitrogen tetroxide into the test system for future projects during the process of demilitarization of Peacekeeper Missiles. The effort minimized the generation of hazardous waste and off-site shipment and disposal costs. | 640 gal |
| 2007 | Sixty groundwater wells continue to utilize dedicated low-flow sampling equipment that was approved by NMED. The technology allows continued use of current well structures, avoids drilling new wells, and minimizes generation of purge water (hazardous waste identified as Investigative Derived Waste). | 36,000 gal |
| 2007 | The Chemistry Laboratory eliminated mercury and mercury containing apparatus. The effort not only recycled the mercury but also eliminated the potential for Persistent Bioaccumulative Toxic Chemical (PBT) emissions or mercury spills. | 63.2 lbs |
| 2007 | Four out of five site parts washers were converted from petroleum naptha based solvents to citrus based solvents. The cleaner can be recycled as used oil once a sampling validates that there are no RCRA metals. | 75 gal |
| 2007 | Contamination Control changed from emptying cleaning tanks with corrosive solutions (Oakites) on a schedule, once a week; to waiting until a bath evaluation deems it necessary for new cleaners. | 360 gal |

Table 2
WSTF Hazardous Waste Recycling
September 30, 2006 through October 1, 2007

| YEAR | HAZARDOUS WASTE RECYCLED | NET REDUCTION |
|------|---|---------------------|
| 2007 | Nickel cadmium batteries were collected and shipped off-site for recycling as universal waste rather than hazardous waste. | 184 lb |
| 2007 | Lithium batteries were collected and shipped off-site for recycling as universal waste rather than hazardous waste. | 21 lb |
| 2007 | Lead acid batteries were collected and shipped off-site for recycle as universal waste rather than hazardous waste. | 1470 lb |
| 2007 | Mercury batteries and Chemistry Laboratory mercury and mercury containing apparatus were shipped off-site in a laboratories mercury elimination effort. | 68.2 lb |
| 2007 | Sampling and evaluation of vacuum pump oil allowed the oil to be characterized as “used oil” rather than hazardous waste. The oil will now be recycled. | 100 gal |
| 2007 | The Valve Shop continued collecting Fomblin oil, a fluorinated halocarbon oil, for off-site recycle. The recycling effort will reduce the hazardous waste generation and costs involved with repurchase of this very expensive product. | Estimated 1 gal. |
| 2007 | WSTF continued to accumulate and recycle lead and brass from the Firing Range as scrap metal. | 232 lb (lead) |
| 2007 | The Facilities Maintenance Group collects mercury containing lamps which are recycled as universal waste. | 2,347 units |

Table 3
WSTF Hazardous Waste Source Reduction/Recycling Future Plans
September 30, 2006 through October 1, 2007

| YEAR | PLANNED SOURCE REDUCTION/RECYCLING | NET REDUCTION |
|-----------------|---|--------------------------|
| 2008 | NASA personnel have chosen the technology and awaiting funding for procurement of equipment that has the capability of maintaining propellants within the parameters required by NASA Shuttle and customer driven specifications. This avoids the high cost of new propellant and monies required for labor, dilution, and disposal of potential hazardous waste. | TBD |
| 2008 | The Propulsion Test Office will continue to demilitarize Peacekeepers and retain the methylhydrazine and nitrogen tetroxide in storage as product for future testing. Fifteen Peacekeeper Missiles are scheduled for processing during each of the next four years. | 160 gal each |
| 2007 and beyond | NASA continues to be an integral support system for the space effort. WSTF support is critical in NASA's ability to test engines at simulated altitudes. Currently, the Propulsion Test Office has configured TS-401 to test systems that use methanol and LOX. Testing with these propellants instead of hydrazine(s) and nitrogen tetroxide will result in reduced generation of hazardous waste at WSTF. | TBD |
| 2008 and beyond | The NASA Plume Front Groundwater Remediation System will be upgraded and continue treating the F001, F002, N-Nitrosodimethylamine, and Nitrodimethylamine contaminants. | > 99.9 % |
| 2008 and beyond | A NASA Mid-Plume Groundwater Remediation System is being developed to capture contaminate mass in the mid-plume area. The targeted contaminants are Freon-113, TCE, PCE, Freon-11, N-Nitrosodimethylamine, and Nitrodimethylamine. | > 99.9 % |
| 2008 and beyond | Contamination Control is researching water purification systems that will allow cleaning process rinse water to be reused. With ample funding the chosen systems would reduce the rinse water hazardous waste stream over 90% and make the technology available to several other applications that either flush or rinse parts or equipment with water in the cleaning or testing process. | 200,000 gal Estimated |
| 2007 and beyond | Studies and initiatives for alternatives for the supply of electricity to run the NASA WSTF Groundwater Remediation System continue to be evaluated. The alternatives include wind, solar, and fuel cells. | TBD |
| 2007 and beyond | Contamination Control is researching precious metal recovery using bench scale testing for possible recovery of gold, platinum and palladium from Space Shuttle fuel cells. | TBD |
| 2008 | The Communications group saved lead acid batteries used to store solar energy at an abandoned microwave site for use in the new forward gate microwave facility. In addition, the new location will explore a small wind generator as a power source. | 300 lb |
| 2008 | The Chemistry Laboratory is investigating processes that do not involve the contamination of scrubber fluids for eliminating hydrazine vapors generated on fume hoods in the labs. | 75 % |

Appendix B
Hazardous Waste Matrix

FY2007 WSTF HAZARDOUS WASTE GENERATION MATRIX
OFF-SITE RECYCLING AND TREATMENT

***NICKEL CADMIUM BATTERIES (CADMIUM D006) WERE RECYCLED AS UNIVERSAL WASTE – OFF-SITE AT AIR CYCLE BROADVIEW, IL
STORED IN 150 DRUM STORAGE FACILITY**

* WSTF shipped 12 lb in 2007.

OFF-SITE RECYCLING

*** LEAD ACID BATTERIES WERE RECYCLED AS UNIVERSAL WASTE – OFF-SITE AT CLEAN HARBORS, DEER PARK, TX
STORED IN 150 DRUM STORAGE FACILITY**

* WSTF shipped 1,492 lb in 2007. In addition, lead acid batteries are recycled by core exchange when new batteries are delivered by the vendor.

OFF-SITE RECYCLING

***LITHIUM BATTERIES (D003) DEACTIVATED AS UNIVERSAL WASTE - OFF-SITE AT AIR CYCLE BROADVIEW, IL
STORED IN 150 DRUM STORAGE FACILITY**

* WSTF shipped 21 lb in 2007.

OFF-SITE RECYCLING

*** MERCURY BATTERIES SILVER(D09) RECYCLED AS UNIVERSAL WASTE – OFF-SITE AT AIR CYCLE BROADVIEW, IL
STORED IN 150 DRUM STORAGE FACILITY**

* WSTF shipped 6 lb in 2007.

OFF-SITE RECYCLING

*** SILVER(D011) RECYCLED THROUGH DEFENSE REUTILIZATION AND MARKETING OFFICE**

* Accumulated during 2007, but not shipped off-site.

OFF-SITE RECYCLING

| *MERCURY/MERCURY CONTAMINATED REFUSE (D009) RECYCLED BY R MERC - OFF-SITE AT CLEAN HARBORS, DEER PARK, TX STORED IN 90 DAY STORAGE UNIT | | | | |
|--|-------------------------------------|----------|------------------------------|-----------------|
| CURRENT WIWPS | WASTE NAME | BUILDING | GENERATING AREA | ANNUAL QUANTITY |
| 10-04-05 | Waste Mercury Switches | 120 | Maintenance and Construction | 0.25 lb |
| 10-20-26 | Contaminated Mercury Materials | 100/200 | Environmental Department | 3 lb |
| 20-02-19 | Contaminated Mercury Materials | 203 | Metallurgy Lab | 0.01 lb |
| 20-02-33 | Waste Mercury | 203 | Metallurgy Lab | 0.2 lb |
| 20-04-17 | Mercury Liquid | 200 | Chemistry Lab | 1 lb |
| 20-04-97 | Mercury Solutions | 200 | Chemistry Lab | 0.25 gal |
| 20-10-01 | Used Mercury/Contaminated Materials | 203 | Calibration | 1 lb |
| 20-10-02 | Flow Calibration Mercury Waste | 203 | Calibration | 2 lb |
| 80-01-05 | Contaminated Mercury Materials | 800 | Lab Tests | 1 lb |
| 10200740, 10200705, and 20200707 | Waste Mercury and Draeger Tubes | 200 | Chemistry Lab | 57 lb |

* WSTF shipped 57 lb in 2007 primarily from Chemistry Lab clean up/mercury elimination. The larger quantity was a Lab Pack.

OFF-SITE TREATMENT

| *PHOTO FIXING SOLUTION CANISTERS (SILVER D011) RECYCLED OFF-SITE AT CLEAN HARBORS, DEER PARK, TX, STORED IN 90 DAY STORAGE UNIT | | | | |
|---|-------------|----------|-----------------|-----------------|
| CURRENT WIWPS | WASTE NAME | BUILDING | GENERATING AREA | ANNUAL QUANTITY |
| 20-03-15 | B & W Fixer | 200 | Photo Lab | 25 gal |

* Accumulated during 2007, but not shipped off-site.

OFF-SITE TREATMENT

| *WASTE PAINT AND ADHESIVE (D001, D005, D006, D007, D008, D009, D018, D035) INCINERATED OFF-SITE AT CLEAN HARBORS, DEER PARK, TX STORED IN 90 DAY STORAGE AREA | | | | |
|--|---|----------|--|-----------------------------------|
| CURRENT WIWPS | WASTE NAME | BUILDING | GENERATING AREA | ANNUAL QUANTITY |
| 100-012 | CH2232092 Paints (Pumpable) | 161 | 90-day Area (Environmental) | Combination of below for shipment |
| 100-014 | CH2232091 Paints (Non-pumpable) | 161 | 90-day Area (Environmental) | Combination of below for shipment |
| 10-03-01 | Waste Paint | 113 | Facilities Construction/Maintenance/Site | 30 gal |
| 10-03-03 | Paint Booth Filters | 113 | Facilities Construction/Maintenance | 25 lb |
| 10-03-06 | Off-spec Paint | 113 | Facilities Construction/Maintenance/Site | 100 gal |
| 10-03-07** | Waste Paint Related Material | 113 | Facilities Construction/Maintenance/Site | 300 lb |
| 10-20-05 | Aerosol Containers | 161 | 90-day Area (Environmental) | Staged for metals recycling |
| 10200617 | Epoxy Floor Coating | 113 | Facilities Construction/Maintenance | 500 lb |
| 10200619 | Metal Plastic Cutting and Off-Spec Chem | 113 | Machine Shop | 10 gal |
| 20-01-49 | Waste Paints/Adhesives | 200 | Clean Room | 4 gal |
| 20-02-24 | Waste Paints/Adhesives | 203 | Metallurgy Lab | 0.13 gal |
| 20-04-84 | OMS-E Valve Assembly Waste | 200 | Chemistry Lab | 0.75 gal |
| 20-08-03** | Unused Test Samples | 200 | Materials Prep | 50 gal |
| 35-01-34 | Spent OMS-E Primer/Adhesive | 200 | Propulsion Test (Components Test) | 0.5 lb |
| 35-01-36 | Two Part Epoxy Ink | 200 | Propulsion Test (Components Test) | 0.4 gal |

- WSTF 4,418 lb were shipped off-site during 2007.

Numerous onetime WIWPSs were created during 2007 in order to facilitate paint/epoxy and paint related clean-ups in the Paint Shop and Materials Prep. The WIWPS below are for waste characterization and shipment preparation including aggregation and lab packing.

WIWPS #s 10200620, 10200631, 10200632, 10200634, 10200635, 10200636, 10200710, 10200711 110200712, 0200715, 10200720, 10200722, 10200724, 10200730 10210601, 10200744, 10200747, 10200748, 10200760, 10210601 closely associate with **10-03-07 (Paint Shop)

WIWPS #s 80026007, 80200602, 80200604, 80200605, 80200607, 80200608, 80200609, 80200703 closely associate with **20-08-03 (Materials Prep)

OFF-SITE TREATMENT

| *CONTAMINATED OILS - VACUUM PUMP, REFRIGERATION, SLUDGE, AND MACHINE SHOP, (F001, F002, F003, F005, D002, D005, D007, D008, D009, D018) INCINERATED OFF-SITE AT CLEAN HARBORS, DEER PARK, TX - STORED IN 90 DAY STORAGE AREA | | | | |
|---|--|----------|---|-----------------|
| CURRENT WIWPS | WASTE NAME | BUILDING | GENERATING AREA | ANNUAL QUANTITY |
| 10200703 | Used Oil Contaminated by Solvents | 156 | Heavy Equipment | 35 gal |
| 10200704 | Contaminated Used Oil | 156 | Heavy Equipment | 35 gal |
| 10200709, 10200716, 10200717, and 10200725 | Diesel Contaminated Soil | Site | Security , Heavy Equipment, and Parking Lot | 1,000 lb |
| 10200750 | Oily Sludge | 156 | Heavy Equipment | 50 lb |
| 10-01-16 | Blast Media | 156 | Heavy Equipment | 556 lb |
| 10-02-02 and 10200637 | Machine Shop Oil | 113 | Machine Shop | 4,250 lb |
| 10-06-09 | Waste Refrigeration Oil | 121 | Facilities Construction/Maintenance/Site | 15 gal |
| 20-10-42 | Glass Beads (Blast Media) | 200 | Clean Room | 70 lb |
| 20-04-38 | Contaminated Hydrocarbon Oil/Sludge | 200 | Chemistry Lab | 0.13 gal |
| 20-02-40 | Cutting Fluid | 203 | Metallurgy Lab | 1 gal |
| 20-04-85 | Contaminated Oils | 200 | Chemistry Lab | 0.5 gal |
| 20-06-07 | Contaminated Vacuum Pump Oil | 200 | Valve Shop | 1 gal |
| 20-20-19 | Contaminated Vacuum Pump Oil | 600 | Environmental | 5 gal |
| 80-01-07 | Waste Lox Pump Oil | 800 | Hazardous Fluids Test | 1 gal |
| 80-03-09 | N ₂ H ₄ Contaminated Vacuum Pump Oil | 800 | Hazardous Fluids Test | 1 gal |
| 80-04-13 | Posttest Oils and Greases | 800 | Prep Lab | 1 gal |
| 80-04-26 and 10200731 | Blast Media | 800 | Hazardous Fluids Test | 20 lb |

* WSTF shipped 5,953 lb of Contaminated Oil, Soil with Oil/Diesel, and Blast Media in 2007.

OFF-SITE TREATMENT

| *CONTAMINATED (FUEL) SOFTGOODS (P068, U098, U099, U133) INCINERATED OFF-SITE - STORED IN 90 DAY STORAGE AREA | | | | |
|--|--|----------|----------------------------|-----------------------------------|
| CURRENT WIWPS | WASTE NAME | BUILDING | GENERATING AREA | ANNUAL QUANTITY |
| 100-009 | Fuel Contaminated Soft Goods | 161 | 90-day Area | Combination of below for shipment |
| 20-01-25 and 10200755 | Fuel Contaminated Soft Goods | 200 | Clean Room | 5 lb |
| 20-04-18 and 10200735 | Fuel Contaminated Soft Goods | 200 | Chemistry Lab | 100 lb |
| 20-20-05 and 10200742 | Hazardous Debris | 200 | Environmental Department | 50 lb |
| 30-01-08 | Fuel Contaminated Soft Goods | 301 | Propulsion Test (300 Area) | 5 lb |
| 40-01-08 | Fuel Contaminated Soft Goods | 412 | Propulsion Test (400 Area) | 5 lb |
| 50-20-01 | Fuel Contaminated Soft Goods | 500 | Fuel Treatment Unit | 2 lb |
| 50200601 | Granular Activated Carbon w/hydrazines | 500 | Fuel Treatment Unit | 389 lb |
| 80-02-09 | Fuel Contaminated Soft Goods | 800 | Hazardous Fluids Test | 17 lb |

* WSTF shipped 739 lb of hydrazine(s) contaminated soft goods/charcoal in 2007.

OFF-SITE TREATMENT

| *CONTAMINATED (OXIDIZER) MATERIALS (P078,ORIGINALLY BUT HAVE BEEN ADGASSED) INCINERATED OFF-SITE - STORED IN 90 DAY STORAGE AREA | | | | |
|--|---|----------|------------------------------------|-----------------|
| CURRENT WIWPS | WASTE NAME | BUILDING | GENERATING AREA | ANNUAL QUANTITY |
| 10200736 | Oxidizer Contaminated Debris | 150 | Environmental shipping aggregation | 10 lb |
| 10200756 | Oxidizer/Fuel Contaminated Debris | 150 | Environmental shipping aggregation | 10 lb |
| 20-01-24 | Oxidizer Contaminated Soft Goods | 200 | Clean Room | 10 lb |
| 20-04-16 | Oxidizer Contaminated Soft Goods | 200 | Chemistry Lab | 75 lb |
| 20-04-56 | Oxidizer Interscan Sensors | 200 | Chemistry Lab | 10 units |
| 30-01-30 | Oxidizer Contaminated Soft Goods | 301 | Propulsion Test (300 Area) | 5 lb |
| 30-01-34 | Propellant Contaminated Desiccant Tubes | 301 | Propulsion Test (300 Area) | 75 units |
| 40-01-18 | Used Mole Sieve Pellets | 401 | Propulsion Test (400 Area) | 10 lb |
| 40-01-28 | Oxidizer Contaminated Soft Goods | 412 | Propulsion Test (400 Area) | 5 lb |
| 80-02-08 | Oxidizer Contaminated Soft Goods | 800 | Hazardous Fluids Test | 15 lb |

* WSTF shipped 177 lb (80 kg) in 2007.

OFF-SITE TREATMENT

| *CONTAMINATED SOFTGOODS AND REFUSE (F001, F002, F003, F004, F005, D007, D008, D011, D022) INCINERATED OFF-SITE AT CLEAN HARBORS, DEER PARK, TX - STORED IN 90 DAY STORAGE AREA | | | | |
|---|--------------------------------------|----------|------------------------------------|-----------------------------------|
| CURRENT WIWPS | WASTE NAME | BUILDING | GENERATING AREA | ANNUAL QUANTITY |
| 100-015 | CH2175352 Refuse | 161 | 90-day Area | Combination of below for shipment |
| 10-01-18, 10200726, and 10200729 | Contaminated Rags | 156 | Facilities Heavy Equipment | 50 lb |
| 10-02-07 | Dye Penetrate Refuse | 113 | Facilities Machine Shop | 10 lb |
| 10-02-15 | Contaminated Debris | 113 | Facilities Machine Shop | 20 lb |
| 10-03-04 and 10200721 | Solvent Contaminated Soft Goods/Rags | Tiki 151 | Paint Shop | 60 lb |
| 10-04-14 | Contaminated Refuse | 121 | Facilities Maintenance | 5 lb |
| 10-06-12 | Contaminated Refuse | 121 | Facilities Maintenance | 30 lb |
| 10-10-12 | Solvent Contaminated Rags | 151 | GSA | 10 lb |
| 10200713 | Spent Aerosolv Filter | 161 | Environmental | 2 lb |
| 10200759 | Off-spec Products | 161 | 90-day Area (Environmental) | 90 lb |
| 10-20-01 | Contaminated Refuse | 161 | 90-day Area (Environmental) | 10 lb |
| 10-20-18 | Contaminated Refuse | 650 | Treatment Building (Environmental) | 20 lb |
| 20-01-33 and 20200711 | Contaminated Refuse | 200 | Clean Room | 30 lb |
| 20-01-60 | Waste Filter Cartridges | 200 | Clean Room | 30 lb |
| 20-02-22 | Contaminated Refuse | 203 | Metallurgy Lab | 50 lb |
| 20-02-41 | Lead Contaminated Soft Goods | 203 | Metallurgy Lab | 15 lb |
| 20-02-42 | Metallographic Consumables | 203 | Metallurgy Lab | 25lb |
| 20-04-31 | Waste Firebrick Material | 200 | Chemistry Lab | 6.6 lb |
| 20-04-40 | Contaminated Refuse | 200 | Chemistry Lab | 125 lb |
| 20-04-71 | Alodine 600 Contaminated Soft Goods | 200 | Chemistry Lab | 1 lb |

CONTAMINATED SOFTGOODS AND REFUSE CONT'D

| CURRENT WIWPS | WASTE NAME | BUILDING | GENERATING AREA | ANNUAL QUANTITY |
|------------------------------------|--------------------------------------|----------|-------------------------------------|-----------------|
| 20-04-83 | OMS-E Valve Assembly Waste (Solid) | 200 | Chemistry Lab | 1 lb |
| 20-04-89 | Thruster Nozzle Coatings | 200 | Chemistry Lab | 2.2 lb |
| 20-04-93 | Extraction Soft Goods and Vials | 200 | Chemistry Lab | 3 lb |
| 20-06-09 | Contaminated Refuse | 203 | Chamber Lab | 10 lb |
| 20-07-06 | Solvent Contaminated Soft Goods | 200 | Valve Shop | 100 lb |
| 27-01-23, 50200702 and 10200749 | Contaminated Debris | 272 | Hypervelocity | 50 lb |
| 30-01-06 | Solvent Contaminated Soft Goods | 301 | Propulsion Test (300 Area) | 11b |
| 35200701 | VRCS Standoff Lapping Residue | 200 | Components Test | 2 lb |
| 35200703 | Hydraulic Oil Contaminated Materials | 200 | Components Test | 2 lb |
| 40-02-26 | Contaminated Rags | 400 | Propulsion Test (Steam) | 20 lb |
| 80-02-74 | Oily Contaminated Rags and Spill Dry | 802 | Hazardous Pressure Test Area (Shop) | 10 lb |
| 80-02-39 | Contaminated Refuse | 800 | Hazardous Fluids Test | 10 lb |
| 80-04-09 | Contaminated Refuse | 803 | Prep Lab | 10 lb |
| 80200720 | Contaminated Refuse | 800 | Hazardous Pressure Test Area | 10 lb |

* WSTF shipped 1222 lb in 2007.

OFF-SITE TREATMENT

| *ORGANIC SOLVENTS, CLEANERS, THINNERS (D001, D035, F001, F002 F003, F004, F005) INCINERATED OFF SITE AT CLEAN HARBORS, DEER PARK, TX. STORED IN 90 DAY STORAGE UNIT | | | | |
|--|------------------------------------|----------|--------------------------------------|-----------------------------------|
| CURRENT WIWPS | WASTE NAME | BUILDING | GENERATING AREA | *ANNUAL QUANTITY |
| 100-005 | CH2232093 Isopropyl Alcohol | 161 | 90-day Area Environmental Department | Combination of below for shipment |
| 100-010 | CH2232088 Organics | 161 | 90-day Area Environmental Department | Combination of below for shipment |
| 10-01-05 | Spent Petroleum Naptha | 100 | Heavy Equipment | 16 gal |
| 10-01-08 | Carburetor Cleaner | 100 | Heavy Equipment | 12 gal |
| 10-02-08 | Dye Penetrant | 113 | Facilities Machine Shop | 0.25 gal |
| 10-03-02 | Waste Thinner | 112 | Facilities Construction | 10 gal |
| 10-04-11 | Waste Lacquer Thinner | 121 | Facilities Maintenance | 1 gal |
| 20-01-05 AND 10200757 | Spent Isopropyl Alcohol | 200 | Clean Room | 100 gal |
| 20-01-40 and 10200702 | Pre-Clean Acetone | 200 | Clean Room | 5 gal |
| 20-02-05 | Spent Organic Solvents | 203 | Metallurgy Lab | 2 gal |
| 20-04-04 and 20200754 | Spent Organic Solvents | 200 | Chemistry Lab | 10 gal |
| 20-04-32 | VCM Organic Waste | 200 | Chemistry Lab | 2.6 gal |
| 20-04-33 | Spent Photovolt Solution | 200 | Chemistry Lab | 2.6 gal |
| 20-04-53 | Toluene/IPA | 200 | Chemistry Lab | 1 gal |
| 20-04-55 | VOC Contaminated Aqueous Waste | 200 | Chemistry Lab | 0.25 gal |
| 20-04-72 | Dimethyl-2-Azidoethylamine | 200 | Chemistry Lab | 1.9 gal |
| 20-04-75 | UDMH-Oxidizer Waste | 200 | Chemistry Lab | 1 gram |
| 20-04-91 | Groundwater Extracts and Standards | 200 | Chemistry Lab | 1.9 gal |
| 20-04-92 | Groundwater and Acetone Solution | 200 | Chemistry Lab | 0.5 gal |
| 20-04-94 | Spent Methamphetamine Test Kit | 200 | Chemistry Lab | 0.1 gal |
| 20-04-100 | E-85 Fuel Water Waste | 200 | Chemistry Lab | 0.25 gal |

ORGANICS CONT'D

| CURRENT WIWPS | WASTE NAME | BUILDING | GENERATING AREA | *ANNUAL QUANTITY |
|-----------------------|--------------------------------------|----------|----------------------------------|------------------|
| 20-04-105 | Organic Waste Water | 200 | Chemistry Lab | 50 gal |
| 20-08-03** | Unused Test Samples | 200 | Materials Prep | 50 gal |
| 20-08-04 | Methyl Isobutyl Ketone | 200 | Prep Lab | 0.13 gal |
| 30-02-18 | Waste Organic Solvents | 300 | Propulsion Test (Test Stand 303) | 0.5 gal |
| 35-01-05 | Waste IPA | 200 | Propulsion Test (Component Test) | 0.53 gal |
| 35-01-32 | Spent & Off-spec Primer 2001 | 200 | Propulsion Test (Component Test) | 0.03 gal |
| 40-02-08 | Waste IPA/Water | 400 | Propulsion Test (Steam) | 10 gal |
| 40-02-04 | Spent Petroleum Naptha Parts Cleaner | 400 | Propulsion Test (Steam) | 16 gal |
| 40-02-10 | Waste Diesel | 400 | Propulsion Test (Steam) | 25 gal |
| 40200702 and 40200703 | Parts Cleaners Solvent and Sludge | 400 | Propulsion Test (Steam) | 55 gal |
| 80-04-03 | Waste Organic Solvents | 800 | Materials Test | 6 gal |

* WSTF shipped 3,583 lb of Waste Organics in 2007.

Numerous onetime WIWPSs were created during 2007 in order to facilitate lab packing of no longer used Paint Shop thinners and reducers and Materials Prep samples. The WIWPS below are for waste characterization and shipment preparation.

WIWPS #s 10200706, 10200719, 10200734, 10200738, 10200739, 10200743, 10200754, 20200702, 20200703, 20200710, 20200758 closely associate with 10-03-01, 10-03-02 and 10-04-11 (Painting Paint Shop)

WIWPS #s 80200704, 80200705, 80200706, 80200708, 80200710, 80200711, 80200714, 80200715 80200716, 80200717, 80200718 closely associate with 20-08-03 (Materials Prep.)

OFF-SITE TREATMENT

| WASTE FUEL (P068, U098, U133) INCINERATED OFF-SITE AT CLEAN HARBORS, DEER PARK, TX - STORED IN FUEL TREATMENT UNIT AT <10% | | | | |
|--|--|----------|-----------------------------------|-----------------------------------|
| CURRENT WIWPS | WASTE NAME | BUILDING | GENERATING AREA | ANNUAL QUANTITY |
| 100-018 | Water With Hydrazines | 500 | FTU (Environmental) | Combination of below for shipment |
| 20-04-61 | Waste Fuel Hokes | 200 | Chemistry Lab | 10 gal |
| 30-01-01 | Fuel Contaminated Decon Water | 300 | Propulsion Test (300 Area) | 5300 gal |
| 30-01-03 | Fuel Contaminated Aspirator Water | 300 | Propulsion Test (300 Area) | 50 gal |
| 30-01-35 | TES Decon Rinse Water | 300 | Propulsion Test (300 Area) | 100 gal |
| 30-01-40 | Decon Sink Water With Fuel | 300 | Propulsion Test (300 Area) | 55 gal |
| 30-02-01 | Hydrazine Contaminated Decon Water | 300 | Propulsion Test (302/3 Test Area) | 2 gal |
| 40-01-01 | Fuel Contaminated Decon Water | 400 | Propulsion Test (400 Area) | 50 gal |
| 40-01-03 | Fuel Contaminated Aspirator Water | 400 | Propulsion Test (400 Area) | 50 gal |
| 40-01-46 | TES Decon Rinse Water | 400 | Propulsion Test (400 Area) | 200 gal |
| 40-01-54 | Decon Sink Water With Fuel | 400 | Propulsion Test (400 Area) | 55 gal |
| 80-02-04 | Waste Fuel and Water | 800 | Hazardous Fluids Test Area | 100 gal |
| 80-02-19 | Fuel Decon Water | 800 | Hazardous Fluids Test Area | 150 gal |
| 80-02-26 | Waste Fuel and Water | 843 | Hazardous Fluids Test Area | 50 gal |
| 80-02-28 | N ₂ H ₄ Contaminated Aspirator Water | 844 | Hazardous Fluids Test Area | 250 gal |
| 80-02-32 | Heat Exchanger Water | 860 | Hazardous Fluids Test Area | 220 gal |
| 80-02-61 | Fuel Contaminated Decon Water | 800 | Hazardous Fluids Test Area | 50 gal |
| 80-02-72 | Post Test Rinse Waste | 800 | Hazardous Fluids Test Area | 50 gal |
| 80-02-73 | Decon Sink Rinse Water | 800 | Hazardous Fluids Test Area | 20 gal |
| 80200701 | Fuel Container Rinse Water | 800 | Hazardous Fluids Test Area | 50 gal |

* WSTF shipped 16,999 lb of water with hydrazines at 1.39%, from the FTU, in 2007.

OFF-SITE TREATMENT

| *CORROSIVES (D002) INCINERATED OFF-SITE AT CLEAN HARBORS, DEER PARK, TX - STORED IN STORED IN 90 DAY STORAGE UNIT | | | | |
|--|--|-----------------|------------------------|------------------------|
| CURRENT WIWPS | WASTE NAME | BUILDING | GENERATING AREA | ANNUAL QUANTITY |
| 10-02-10 | Fab Machine Rinse Water | 113 | Machine Shop | 200 gal |
| 10-02-13 | Spent Contaminated Coolant | 113 | Machine Shop | 1666 lb |
| 20-01-57 | ** Waste Passivation Solution (w/D007) | 200 | Clean Room | 0.53 gal |

* WSTF shipped 2,414 lb in 2007

Onetime WIWPSs were created during 2007 in order to facilitate lab packing of no longer used Materials Prep samples.

WIWPS #s 10200732, 80200606, 80200707, 80200713 are for Corrosives Lab Packs.

OFF-SITE TREATMENT

| METAL BEARING WASTES (D004, D005, D006, D007, D008, D009, D010, D011) OFF-SITE AT CLEAN HARBORS, DEER PARK, TX | | | | |
|---|---------------------------------------|-----------------|----------------------------|------------------------|
| CURRENT WIWPS | WASTE NAME | BUILDING | GENERATING AREA | ANNUAL QUANTITY |
| 20-04-99 | Waste Metal Solutions | 200 | Chemistry Lab | 2.6 gal |
| 20200759 | Waste Metal Solutions (Lab Standards) | 200 | Chemistry Lab | 2.6 gal |
| 80200712 | Oxygen Generators | 800 | Hazardous Fluids Test Area | 50 lb |

ON-SITE TREATMENT

| WASTE FUEL (P068, U133, U099) DILUTED AND TREATED IN EVAPORATION TANK | | | | |
|--|---------------------------------|-----------------|------------------------|------------------------|
| CURRENT WIWPS | WASTE NAME | BUILDING | GENERATING AREA | ANNUAL QUANTITY |
| 20-01-56 | Decon Water | 200 | Clean Room | 500 gal |
| 20-04-03 | Waste Fuel | 200 | Chemistry Lab | 100 gal |
| 20-04-23 | ARC/Microcalorimetry Rinsate | 200 | Chemistry Lab | 5 gal |
| 20-04-102 | Aqueous Contaminated Fuel Waste | 200 | Chemistry Lab | 1 gal |

ON-SITE TREATMENT

| NEUTRALIZED (D003) TREATED IN EVAPORATION TANKS | | | | |
|--|-----------------------|-----------------|------------------------|------------------------|
| CURRENT WIWPS | WASTE NAME | BUILDING | GENERATING AREA | ANNUAL QUANTITY |
| 20-04-02 | Cyanide Bearing Waste | 200 | Chemistry Lab | 3.0 L |

ON-SITE TREATMENT

| INVESTIGATIVE DERIVED WASTE (F001, F002) TREATED IN EVAPORATION TANKS | | | | |
|--|--|-----------------|--------------------------|------------------------|
| CURRENT WIWPS | WASTE NAME | BUILDING | GENERATING AREA | ANNUAL QUANTITY |
| 10-09-05, 10-09-10 10-20-13, 10-20-30 | Purged Groundwater, Decon Water, and Untreated Remediation Waste with IDW | All Areas | Environmental Department | 13,336 gal |

ON-SITE TREATMENT

| CORROSIVES (D002) DILUTED AND TREATED IN THE EVAPORATION TANKS | | | | |
|--|------------------------------|----------|------------------------------|-----------------|
| CURRENT WIWPS | WASTE NAME | BUILDING | GENERATING AREA | ANNUAL QUANTITY |
| 20-01-11 | Spent Oakite HD126 Solution | 200 | Clean Room | 2,080 gal |
| 20-01-13 | Spent Oakite Ruststripper | 200 | Clean Room | 500 gal |
| 20-01-14 | Spent Pickling Solution | 200 | Clean Room | 50 gal |
| 20-01-22 | Derust H SS-3 | 200 | Clean Room | 5 lb |
| 20-01-26 | Sta-Clean | 200 | Clean Room | 5 lb |
| 20-01-38 | Citric Acid 5% | 200 | Clean Room | 1,000 gal |
| 20-01-41 | Brass/Copper Brightener | 200 | Clean Room | 10 gal |
| 20-01-44 | Oakite Deoxidizer | 200 | Clean Room | 110 gal |
| 20-01-50 | Waste Oakite 31 | 200 | Clean Room | 2,080 gal |
| 20-02-01 | Spent Inorganic Etchants | 203 | Metallurgy Lab | 0.5 gal |
| 20-04-74 | Hydrolyzed Oxidizer | 203 | Metallurgy Lab | 10 gal |
| 20-04-88 | Acid/Glycerine Electrolyte | 200 | Chemistry Lab | 0.26 gal |
| 20-14-04 | Solar Brite Detergent | 200 | Clean Room (PPE) | 2 gal |
| 20200603 | Passivation Process Waste | 200 | Clean Room | 200 gal |
| 30-01-02 | Decon Water w/Oxidizer | 301 | Propulsion Test (Shuttle) | 60 gal |
| 30-01-04 | Oxidizer Aspirator Water | 301 | Propulsion Test (Shuttle) | 50 gal |
| 30-01-46 | TES Decon Rinse Water W/Ox | 300 | Propulsion Test (Shuttle) | 200 gal |
| 40-01-02 | Decon Water w/Oxidizer | 412 | Propulsion Test (Shuttle) | 100 gal |
| 40-01-04 | Oxidizer Aspirator Water | 412 | Propulsion Test (Shuttle) | 100 gal |
| 40-01-69 | TES Decon Rinse Water W/Ox | 400 | Propulsion Test (Shuttle) | 200 gal |
| 80-02-03 | Oxidizer Decon Water | 800 | Hazardous Fluids Test Area | 150 gal |
| 80-02-77 | Nitrogen Tetroxide | 800 | Hazardous Fluids Test Area | 2 gal |
| 80-04-10 | Aqueous Flash Point Samplese | 800 | Hazardous Pressure Test Area | 1.6 gal |
| 80-04-17 | Spent Oakite 31 | 803 | Materials Prep | 10 gal |
| 80-04-18 | Spent Oakite 126 | 803 | Materials Prep | 10 gal |
| 80-04-24 | Diluted Detergents | 803 | Materials Prep | 15 gal |